

# Iowa Greenhouse Gas Emissions and Current DNR Climate Change Activities

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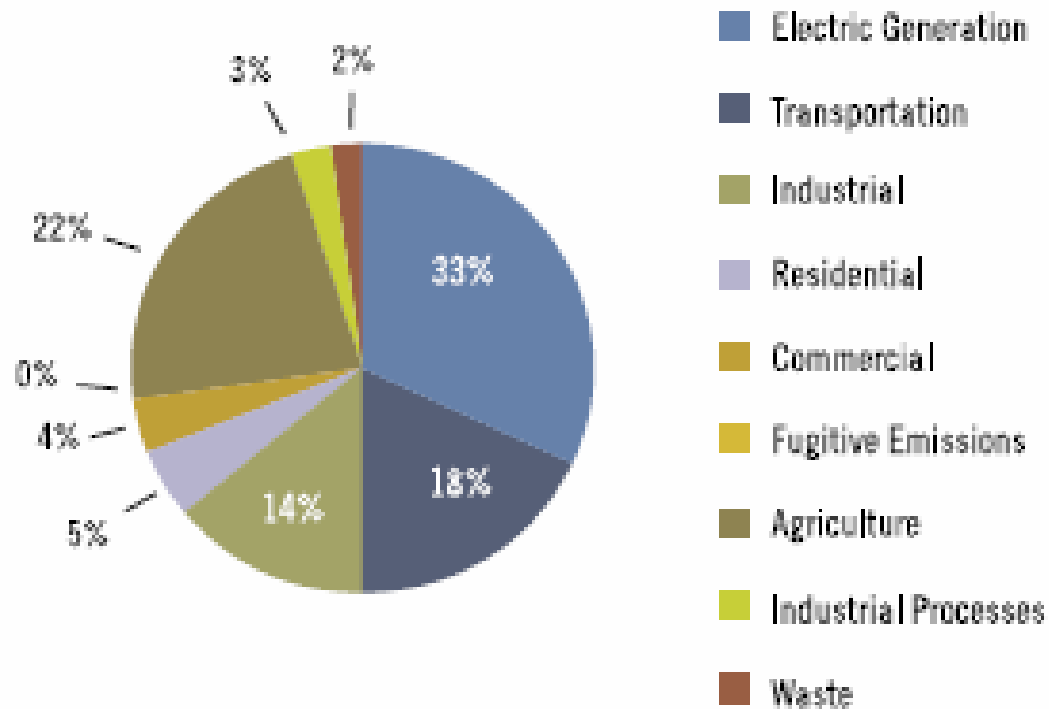
# Iowa Greenhouse Gas Emissions

Source: WRI – “Charting the Midwest” - November 2007

- In 2003, Iowa GHG emissions totaled 108 MtCO<sub>2</sub>e, representing 7 percent of Midwest emissions and 2 percent of U.S. emissions.
  - = Annual greenhouse gas emissions from 19,780,220 passenger vehicles
  - = CO<sub>2</sub> emissions from the energy use of 9,532,215 homes for one year
  - = Carbon sequestered by 2,769,230,769 tree seedlings grown for 10 years.
  - = CO<sub>2</sub> emissions from burning 563,969 railcar's worth of coal.
  - = Greenhouse gas emissions avoided by recycling 37,241,379 tons of waste instead of sending it to the landfill.

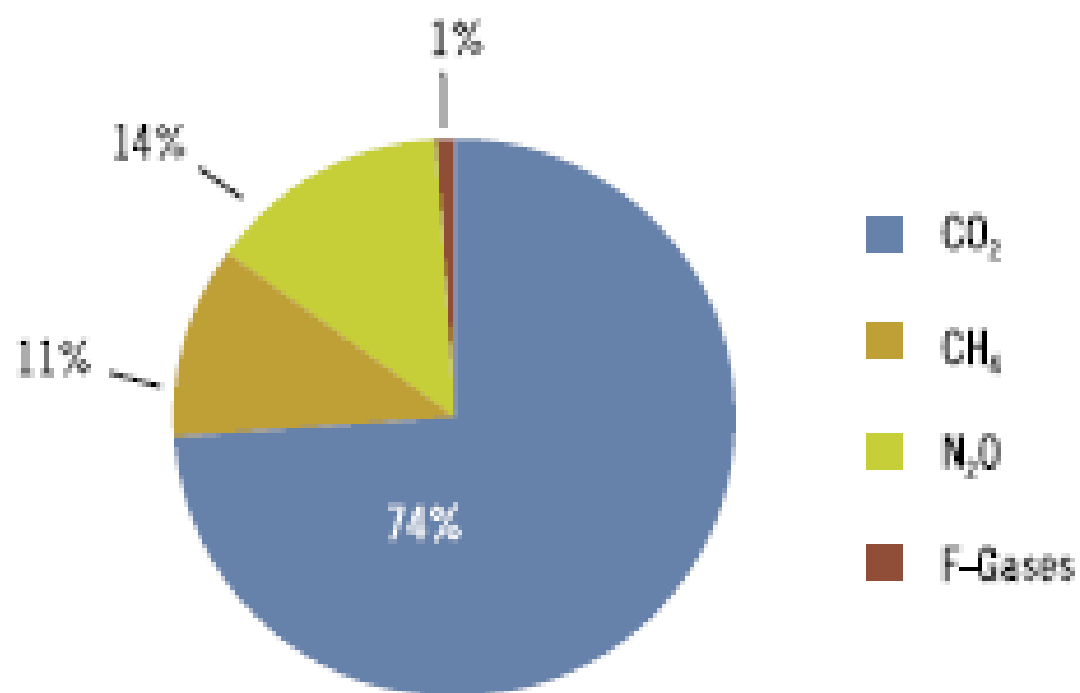
Iowa's top-emitting sectors include electric generation, agriculture, transportation, and industrial energy use.

Figure 4.8 | Iowa GHG Emissions by Economic Sector: 2003



Source: WRI, CAIT-US (2007).

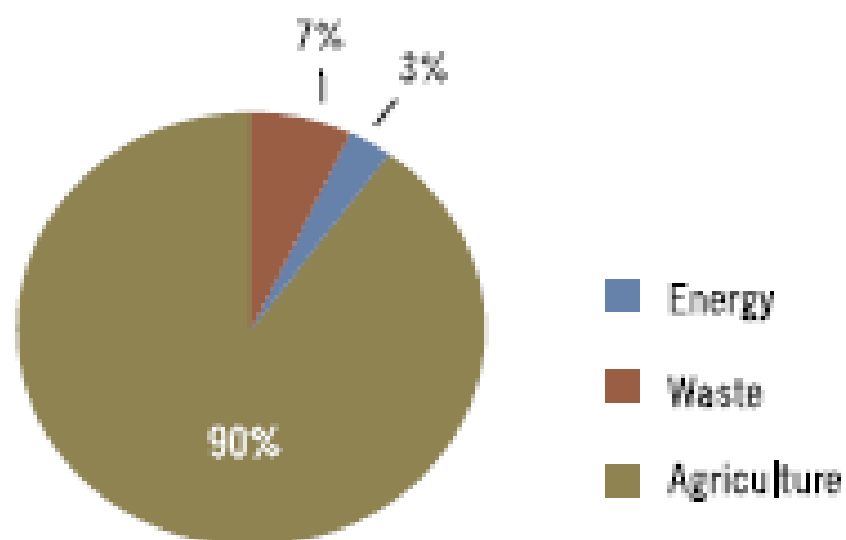
Figure 4.9 | Iowa GHG Emissions by Gas: 2003



Source: WRI, CAT-US (2007).

GHG emissions from agriculture (CH<sub>4</sub> and N<sub>2</sub>O) in Iowa account for more than 22 percent, or 24 MtCO<sub>2</sub>e, of total emissions, the highest contribution from this sector of any state in the Midwest.

Figure 4.10 | Iowa N<sub>2</sub>O and CH<sub>4</sub> Emissions by Sector: 2003



Source: WRI, CAIT-US (2007).

# Iowa Greenhouse Gas Legislation

- Senate File 485, which was passed in 2007 and became effective July 1, 2007, requires DNR to address greenhouse gas emissions in four areas:
  1. Air Pollution Construction Permit Applications
  2. Air Pollution Emissions Inventories
  3. The Climate Registry
  4. The Iowa Climate Change Advisory Council

# Air Pollution Construction Permit Applications

- Facilities in Iowa that install equipment that will emit air pollution must apply for a permit prior to construction.
- All construction permit applications submitted to the Department after July 1, 2007 must include estimates of **potential** greenhouse gas emissions.
- As of February 29, 2008 we have received applications for 410 projects with estimated total greenhouse gas emissions of
  - 10.5 million tons of carbon dioxide,
  - 1,000 tons of methane,
  - 100 tons of nitrous oxide, and
  - 3 tons of sulfur hexafluoride.

# Air Emissions Inventories

- An air emissions inventory is an itemized list of emission estimates for sources of air pollution in a given area for a specified time period.
  - Present and future year inventories are critical components of air quality planning and modeling.
  - Emissions inventories are typically done on an annual basis.
- Senate File 485 requires DNR to establish a method for collecting data from producers of GHGs.
  - The method shall allow for mandatory reporting from individual affected entities and shall include the amount and type of GHGs generated, the type of sources, and any other relevant information needed to establish a baseline inventory for Iowa.
  - The law does allow for us to phase the emissions inventory in over time by producer sector, geographic area, size of producer, or other factors.



# Air Emissions Inventories (continued)

- Who Reports?
  - For the first year we have chosen to require the 283 largest air polluting facilities and all ethanol facilities (approx 46) to report their 2007 CO<sub>2</sub>, Methane, and Nitrous Oxide emissions from their combustion of fossil fuels.
  - Ethanol plants must also report their CO<sub>2</sub> emissions from the fermentation process.
- When? Due March 31, 2008

# Air Emissions Inventories (continued)

- How?
  - We created specialized forms for industry to use.
  - The forms are pre-filled with the calculation formulas to ease the burden on Industry.
  - An informational meeting was on October 10<sup>th</sup>.
  - An informal workgroup of industry reps and other interested parties was formed to review our methods.

# Air Emissions Inventories (continued)

- We plan to expand the inventory to:
  - Add reporting of hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.
  - Eventually require mandatory reporting for both major and minor facilities.
- Use an EPA tool to do a state-wide estimate of greenhouse gas emissions from mobile and agricultural sources.
- We will compile the data and report it annually to the Governor and General Assembly by September 1 of each year, as required by the legislation.

# Climate Registry

- DNR must create a voluntary greenhouse gas registry for purposes of cooperating with other states in tracking, managing, and crediting entities in Iowa that reduce their generation of greenhouse gases or that provide increased energy efficiency.
- This was achieved when Governor Culver signed Iowa onto the national Climate Registry last July.
- A registry can be described as a collection of inventories that were all done using the same methods and data reporting standards.

# Climate Registry (continued)

- The Climate Registry is a collaboration between states, provinces and tribes
  - aimed at developing and managing a common greenhouse gas emissions reporting system with high integrity and
  - capable of supporting various greenhouse gas emission reporting and reduction policies for its member states and tribes and reporting entities.

# Climate Registry (continued)

- 39 states, 7 Canadian provinces, and 2 Mexican states have signed on to The Climate Registry to date.
  - agreed to establish and endorse a voluntary entity-wide greenhouse gas emissions reporting and verification system,
  - will encourage entities in their state to voluntarily report their emissions to The Climate Registry.
- DNR has held one informational/recruiting session for Iowa facilities.
  - None have joined the registry to date.
  - Approximately 66 individual companies and government entities in other states have joined the registry to voluntarily report their emissions.
  - We hope to do more recruiting in the future.

# Iowa Climate Change Advisory Council (ICCAC)

- DNR shall provide staff assistance to the Iowa Climate Change Advisory Council.
- The Council has 23 members appointed by Governor Culver and 4 ex-officio members appointed by the General Assembly. The council is charged with:
  - developing multiple scenarios designed to reduce statewide GHG emissions including one scenario that would reduce such emissions by 50% by 2050.
  - developing short term, medium term, and long term scenarios designed to reduce statewide GHG emissions and consider the cost-effectiveness of the scenarios.
  - establishing a baseline year for purposes of calculating reductions in statewide GHG emissions

# ICCAC (continued)

- The Council voted to develop scenarios for both a 50% and 90% reduction by 2050 using a baseline year of 2005,
- Also voted to look at scenarios for reductions by 2012, 2020, and 2040.
- The council is working with a facilitator, the Center for Climate Strategies, to complete their work by Dec 31, 2008.
- The full Council meets every other month.
- They have divided into five subcommittees that meet twice between each meeting of the full Council.



# ICCAC (continued)

- The subcommittees include additional outside experts from the universities, state government, environmental groups, and industry and will be making presenting draft policy proposals to the Council at their next meeting on April 11.
- Subcommittees are:
  - Agriculture, Forestry and Waste Management
  - Clean and Renewable Energy
  - Cross Cutting
  - Energy Efficiency and Conservation
  - Transportation and Land Use

# Find Us on the Web

- For the full schedule of the Council's activities, visit the Council's website – [www.iaclimatechange.us](http://www.iaclimatechange.us).
- DNR's greenhouse gas emissions website - <http://www.iowadnr.gov/air/prof/ghg/ghg.html>

# Questions?

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